IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A wireless apparatus comprising:

an adaptive channelization controller to determine which of a plurality of predetermined sub-channels to use to support a multicarrier wireless link, based on channel state information; and

a receiver chain to process a received multicarrier signal associated with said multicarrier wireless link based on control information output by said adaptive channelization controller;

wherein said receiver chain includes:

a frequency demultiplexer to separate said received multicarrier signal into multiple signal portions based on frequency, said multiple signal portions corresponding to said plurality of predetermined sub-channels; and

a plurality of Fourier transform units to separately process said multiple signal portions output by said frequency demultiplexer, said plurality of Fourier transform units including at least a first Fourier transform unit to process a first signal portion and a second Fourier transform unit to process a second signal portion.

2. (Original) The wireless apparatus of claim 1, further comprising:

a transmitter chain to generate a multicarrier transmit signal for said multicarrier wireless link based on control information output by said adaptive channelization controller.

3.-4. (Canceled)

5. (Currently Amended) The wireless apparatus of claim 1[[4]], wherein:

said receiver chain further includes a guard interval removal unit between said frequency demultiplexer and said plurality of Fourier transform units to remove guard intervals from said multiple signal portions output by said frequency demultiplexer.

6. (Currently Amended) The wireless apparatus of claim 1[[4]], wherein:

said plurality of Fourier transform units includes at least one fast Fourier transform unit.

7. (Currently Amended) The wireless apparatus of claim 1[[4]], wherein:

said receiver chain further includes an adaptive parallel to serial converter to receive output streams from said plurality of Fourier transform units and to merge said output streams into a serial stream based on control information from said adaptive channelization controller.

8. (Original) The wireless apparatus of claim 7, wherein:

said adaptive parallel to serial converter ignores output streams that are associated with sub-channels that are not currently used in support of said multicarrier wireless link.

9. (Original) The wireless apparatus of claim 7, wherein:

said receiver chain further includes an adaptive demapper to demap data within said serial stream output by said adaptive parallel to serial converter based on control information from said adaptive channelization controller.

10. (Original) The wireless apparatus of claim 2, wherein:

said transmitter chain comprises a forward error correction (FEC) encoder to encode source data and an adaptive mapper to map the encoded data based on a predetermined modulation constellation.

11. (Original) The wireless apparatus of claim 10, wherein:

said transmitter chain further comprises an adaptive serial to parallel converter to convert a serial stream output by said adaptive mapper to a parallel format based on control information from said adaptive channelization controller.

12. (Original) The wireless apparatus of claim 11, wherein:

said adaptive serial to parallel converter adds zeros to a parallel output stream in data positions corresponding to sub-channels that are not currently being used to support said multicarrier wireless link.

13. (Original) The wireless apparatus of claim 11, wherein:

said multicarrier transmit signal is an orthogonal frequency division multiplexing (OFDM) signal; and

said transmitter chain further includes an inverse Fourier transform unit to convert a parallel output signal of said adaptive serial to parallel converter from a frequency domain representation to a time domain representation.

14. (Original) The wireless apparatus of claim 13, wherein:

said transmitter chain further includes a guard interval addition unit to add a guard interval to said time domain representation output by said inverse Fourier transform unit.

15. (Original) The wireless apparatus of claim 2, wherein:

said adaptive channelization controller, said receiver chain, and said transmitter chain are all implemented on the same semiconductor chip.

16. (Original) The wireless apparatus of claim 1, wherein:

said channel state information includes information received from a remote location.

17. (Original) The wireless apparatus of claim 1, wherein:

said channel state information includes information that was measured within said wireless apparatus.

18. (Original) A wireless apparatus comprising:

a frequency demultiplexer to separate a received multicarrier signal into multiple portions based on frequency, said multiple portions corresponding to a plurality of predetermined frequency sub-channels and including at least a first portion and a second portion;

a first Fourier transform unit to convert said first portion of said multicarrier signal from a time domain representation to a frequency domain representation; and

a second Fourier transform unit to convert said second portion of said multicarrier signal from a time domain representation to a frequency domain representation, separately from said first portion of said multicarrier signal.

19. (Original) The wireless apparatus of claim 18, wherein:

said second Fourier transform unit is a different unit from said first Fourier transform unit.

20. (Original) The wireless apparatus of claim 18, wherein:

said first and second Fourier transform units are the same unit, wherein said unit processes said first and second portions of said multicarrier signal at different times.

21. (Original) The wireless apparatus of claim 18, further comprising:

a guard interval removal unit between said frequency demultiplexer and said first Fourier transform unit to remove a guard interval from said first signal portion before said first signal portion reaches said first Fourier transform unit.

22. (Original) The wireless apparatus of claim 18, further comprising:

an adaptive channelization controller to determine which of said plurality of predetermined frequency sub-channels to use to support a multicarrier wireless link, based on channel state information.

23. (Original) The wireless apparatus of claim 18, wherein:

said received multicarrier signal is an orthogonal frequency division multiplexing (OFDM) multicarrier signal.

24. (Original) The wireless apparatus of claim 18, further comprising:

at least one other Fourier transform unit to convert at least one other portion of said multicarrier signal from a time domain representation to a frequency domain representation.

25. (Original) The wireless apparatus of claim 18, wherein:

said frequency demultiplexer includes an analog filter.

26. (Currently Amended) A method comprising:

acquiring channel state information associated with a channel having a plurality of sub-channels;

determining which sub-channels within said plurality of sub-channels to use for a wireless link based on said channel state information; ~~and~~

delivering sub-channel adaptation information to a receiver chain for use in processing a multicarrier receive signal associated with said wireless link;

dividing said multicarrier receive signal into a plurality of frequency sub-channel components; and

individually transforming each of said plurality of frequency sub-channel components from a time domain representation to a frequency domain representation.

27. (Original) The method of claim 26, wherein:

said channel state information includes information received from a remote location.

28. (Original) The method of claim 26, wherein:

said channel state information includes information that was measured within a local receiver.

29. (Original) The method of claim 26, wherein:

determining which sub-channels within said plurality of sub-channels to use for said wireless link includes identifying sub-channels that are not currently being used by other links.

30. (Original) The method of claim 26, further comprising:

delivering sub-channel adaptation information to a transmitter chain for use in generating a multicarrier transmit signal for said wireless link.

31. (Original) A method comprising:

dividing a received multicarrier signal into a plurality of frequency sub-channel components; and

individually transforming each of said plurality of frequency sub-channel components from a time domain representation to a frequency domain representation.

32. (Original) The method of claim 31, further comprising:

converting said frequency domain representations resulting from individually transforming said plurality of frequency sub-channel components to a single serial stream based on control information received from an adaptive channelization controller.

33. (Original) The method of claim 31, wherein:

individually transforming includes applying each of said plurality of frequency sub-channel components to a separate Fourier transform unit.

34. (Currently Amended) A system comprising:

an adaptive channelization controller to determine which of a plurality of predetermined sub-channels to use to support a multicarrier wireless link, based on channel state information;

at least one dipole antenna to receive a multicarrier signal associated with said wireless link; and

a receiver chain to process said received multicarrier signal based on control information output by said adaptive channelization controller;

wherein said receiver chain includes:

a frequency demultiplexer to separate said received multicarrier signal into multiple signal portions based on frequency, said multiple signal portions corresponding to said plurality of predetermined sub-channels; and

a plurality of Fourier transform units to separately process said multiple signal portions output by said frequency demultiplexer, said plurality of Fourier transform units including at least a first Fourier transform unit to process a first signal portion and a second Fourier transform unit to process a second signal portion.

35. (Original) The system of claim 34, wherein:

said adaptive channelization controller determines which of said plurality of predetermined sub-channels to use to support said multicarrier wireless link by identifying sub-channels that are currently being utilized by other wireless links.

36. (Original) The system of claim 34, wherein:

said at least one dipole antenna includes multiple dipole antennas.

37. (Currently Amended) An article comprising a computer readable storage medium having instructions stored thereon that, when executed by a computing platform, result in:

acquiring channel state information associated with a channel having a plurality of sub-channels;

determining which sub-channels within said plurality of sub-channels to use for a wireless link based on said channel state information; and

delivering sub-channel adaptation information to a receiver chain for use in processing a multicarrier receive signal associated with said wireless link, wherein said receiver chain includes a frequency demultiplexer to separate said multicarrier receive signal into multiple signal portions based on frequency, said multiple signal portions corresponding to said plurality of predetermined sub-channels and a plurality of Fourier transform units to separately process said multiple signal portions output by said frequency demultiplexer, said plurality of Fourier transform units including at least a first Fourier transform unit to process a first signal portion and a second Fourier transform unit to process a second signal portion.

38. (Original) The article of claim 37, wherein:

determining which sub-channels within said plurality of sub-channels to use for said wireless link includes identifying sub-channels that are not currently being used by other wireless links.

39. (Original) The article of claim 37, wherein said storage medium further includes instructions that, when executed by said computing platform, result in:

delivering sub-channel adaptation information to a transmitter chain for use in generating a multicarrier transmit signal for said wireless link.